CANADA/NEW BRUNSWICK
REGIONAL ECONOMIC
DEVELOPMENT AGREEMENT

ENTENTE CANADA/NOUVEAU-
BRUNSWICK SUR LE DÉVELOPPEMENT
ÉCONOMIQUE RÉGIONAL

MILK GOAT MARKET FEASIBILITY NORTHEAST NEW BRUNSWICK

15 May 2000

This publication is funded under the Canada/New Brunswick Regional Economic Development Agreement (REDA). The Agreement is administered for the federal government by the Atlantic Canada Opportunities Agency (ACOA) and for the provincial government by the Regional Development Corporation (RDC).

Cette publication est financée en vertu de l'Entente Canada/Nouveau-Brunswick sur le développement économique régional (EDER). L'Entente est administrée pour le gouvernement fédéral par l'Agence de promotion économique du Canada atlantique (APECA) et pour le gouvernement provincial par la Societé d'aménagement régional (SAR).

New Nouveau Brunswick

Atlantic Canada Opportunities Agency

Agence de promotion économique du Canada atlantique

Canada

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MARKET FEASIBILITY

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1

INTRODUCTION

This report outlines our understanding of the New Brunswick Department of Agriculture and Rural Development's requirements for a Feasibility Study for the Development of a Milk Goat Industry in North-east New Brunswick.

Our report is comprised of two reports, one for milk and the other for meat. The Summary and Conclusions chapters for both reports are presented in both English and French.

Due to the exploratory nature of the industry, we have drawn conclusions from the US experience, and from the Ontario and Western Canadian experience in the production and marketing of product.

II

RÉSUMÉ ET CONCLUSIONS

A. CONTEXTE

Le marché canadien du lait de chèvre se développe. Le marché actuel comprend de 10 à 15 millions de litres. L'ensemble de la production se fait en Ontario et au Québec. La croissance touche toutefois le secteur du lait de transformation par opposition au lait de consommation.

L'industrie de la chèvre au Canada a connu une croissance de 42 % entre 1991 et 1996. Cette croissance a été plus élevée en Alberta, en Ontario et au Québec. Le nombre de chèvres en Alberta a doublé au cours de cette période. Le nombre de chèvres de boucherie et de chèvres laitières a augmenté en Ontario et au Québec.

L'Ontario possède le plus grand marché canadien pour le lait. Cette province a produit quelque trois millions de litres de lait en 1995. La production dépasse maintenant sept millions de litres en 1999. De cette production, plus de 4 millions de litres sont traités par deux transformateurs. Hewitt est le plus grand transformateur de lait de consommation et Woolwich, le plus grand producteur de fromage.

Le marché du lait de chèvre en Ontario donne une indication du potentiel d'accroissement des ventes. La croissance dans le secteur du fromage de chèvre dur et lissé a développé le marché du lait, en Ontario, la production étant passée de 7 à 8 millions de litres à 15 à 16 millions de litres. Le marché canadien atteindra plus de 20 millions de litres.

Fait tout aussi important, le marché de l'Ontario montre qu'un bon transformateur et spécialiste du marketing peut profiter d'un créneau de marché et s'approprier tout le secteur.

Le marché du nord-est des États-Unis est grand et se développe surtout dans les secteurs de restauration collective. Le marché du lait de chèvre est évalué à environ trois millions de litres destinés à la consommation mais il demeure stagnant. Le fromage représente le secteur de croissance du marché du lait de chèvre. Le volume de lait utilisé dans la fabrication artisanale des fromages est d'environ 10 millions de litres, soit un marché légèrement plus important qu'en Ontario.

Le secteur de la production de lait de chèvre au Canada atlantique connaît des difficultés. La production actuelle de quelque 400 000 litres par année mérite une attention soutenue. Les tendances relatives à la production et à la transformation sont négatives pour le Nouveau-Brunswick.

Du point de vue positif, le marché actuel des fromages de chèvre est très ferme. Pour répondre à ce marché artisanal du fromage et au marché local de lait de consommation, un troupeau de 300 chèvres en lactation est probablement la taille minimale. Selon des prévisions de production prudentes, un troupeau de cette taille est viable, selon les conditions au Nouveau-Brunswick. Les troupeaux plus petits de 150 chèvres sont, tout au plus, légèrement viables.

B. FACTEURS DE RÉUSSITE DÉTERMINANTS

1. Pénétrer les marchés établis. Le marché local du lait de chèvre de consommation est stable et se développe lentement. Il ne se développe toutefois pas assez rapidement et il n'est pas assez grand pour absorber la production générée par 300 chèvres en lactation. Le producteur doit donc intervenir sur les marchés du fromage et du lait de consommation ou diriger toute sa production et ses efforts de marketing vers un marché ou l'autre. Il serait préférable d'axer la production et le marketing sur les marchés de fromage mou d'une plus grande valeur et de permettre à un autre producteur d'approvisionner le marché du lait de consommation. Le fromage de chèvre est un produit principal tandis que le lait est un produit de spécialité vendu par quelques magasins.

L'autre possibilité serait de produire une quantité suffisante de lait pour approvisionner le marché local du lait de consommation dans le but de vendre l'ensemble de la production de lait à contrat à des fromageries du Québec et de l'Ontario.

2. Établir une petite installation artisanale de transformation. Une petite installation inspectée par le gouvernement fédéral pourrait être construite pour la transformation de 500 à 1 000 litres de lait par jour. Elle comprendrait un petit réservoir, un pasteurisateur, des réservoirs de caillé, des moules à fromage et un système de réfrigération. Le système pourrait être élargi à une date ultérieure pour les fromages durs. Les coûts d'une usine de cette taille varient selon que l'équipement est acheté neuf ou usagé. Le point essentiel n'est pas l'équipement mais le bâtiment, l'approvisionnement en eau et la manutention des eaux usées. La qualité du bâtiment doit répondre aux normes de l'ACIA (Agence canadienne d'inspection des aliments). Presque tout l'équipement en acier inoxydable, neuf ou usagé, doit être approuvé par le gouvernement fédéral. Le coût d'une telle installation se situe entre 40 000 $ et 150 000 $. Tout dépend du bâtiment neuf ou existant, du réseau

municipal d'approvisionnement en eau et d'élimination des eaux usées, et de la qualité de l'équipement usagé.

Le choix de la transformation à la ferme ou à l'extérieur de la ferme dépend de certains facteurs comme l'eau et l'épuration des eaux usées, le financement, etc. Les installations à l'extérieur de la ferme ont tendance à être plus faciles à financer.

3. La production doit comprendre 300 chèvres laitières. Les coûts montrent que, selon les conditions au Nouveau-Brunswick, les troupeaux plus petits ont une faible rentabilité. Cela est dû au coût élevé des céréales fourragères. Si les producteurs laitiers actuels possèdent déjà leur propre système de production de fourrage et une salle de traite, qui peuvent être convertis pour la chèvre laitière, la taille du troupeau peut être plus petite. Mais pour un débutant qui désire se lancer en affaires, il faut au moins 300 chèvres laitières.

4. Des réseaux commerciaux doivent être créés pour la mise en marché en deux étapes. Les prix et les coûts doivent être tels qu'un distributeur peut être classé dans un réseau commercial. Le marketing à la ferme est une méthode de vente coûteuse, qui utilise le temps de gestion qui pourrait être consacré à la production et à la transformation. Les coûts doivent comprendre au moins une marge commerciale de 25 % pour les distributeurs.

La concurrence des grands producteurs de fromage de chèvre affectera l'entrée sur le marché des épiceries et du secteur de la restauration collective (Hôtels, restaurants et collectivités) tandis que la concurrence des producteurs de fromage de chèvre amateurs affectera les ventes locales. Il faut établir le prix du lait à la ferme à environ 0,70 $ le litre. Pour le fromage lissé, le prix de transformation à la ferme doit être d'environ 8 $ le kilogramme. La capacité d'importer le caillé et les fromages finis d'Europe plafonne les prix de vente en gros des fromages lissés et durs.

5. Les volumes de vente de fromage doivent atteindre un niveau où il est rentable d'approvisionner un centre de distribution d'épiceries (par exemple étiquettes privées pour Sobey's/IGA) ou d'autoriser un distributeur à utiliser le produit sur une base Horeco. Il faut au moins 500 kg par semaine pour que l'on puisse promouvoir et transporter le fromage à des points de vente (1 à 2 pallettes) sur une base rentable.

6. La gestion est essentielle à la production, à la transformation, aux ventes et au marketing. Afin de ne pas trop éparpiller les efforts en gestion, il faut concentrer sur la production de fromage. Une production à intégration verticale à petite échelle exige une très bonne gestion et coûte très cher. Au début, il faudra peut-être vendre du lait de consommation et, à mesure que la production augmentera pour atteindre plus de 1 000 litres par semaine (exigence du marché local), il faudra

commencer à exporter le lait de consommation en Ontario ou au Québec avant de commencer la production du fromage.

Le marché du fromage de chèvre se développe. C'est un produit principal qui peut utiliser toute la production de lait de chèvre du Nouveau-Brunswick.

II

SUMMARY AND CONCLUSIONS

A. GENERAL

The Canadian market for goat milk is growing. The current market is in the range of 10 – 15 million liters. The bulk of production is in Ontario and Quebec. The growth however is for industrial milk as opposed to fluid.

Canada's goat industry has shown 42% growth between 1991 and 1996. Growth has been greatest in Alberta, Ontario and Quebec. Alberta goat numbers have doubled in this period. Goat numbers in Ontario and Quebec have shown growth in both meat and milk goats.

The largest Canadian market for milk is Ontario. Ontario produced some 3 million liters of milk in 1995. The production has now grown to over 7 million liters in 1999. Of this production, over 4 million liters, is handled by two processors. Hewitt is the largest fluid milk processor and Woolwich is the largest in cheese production.

The Ontario market for goat's milk gives an indication of the potential for increased sales. The growth in soft and hard goat cheeses is driving the milk market from around 7 - 8 million liters in Ontario to 15-16 million liters. The Canadian market will rise to over 20 million liters.

Just as importantly, the Ontario market shows the ability of one good processor and marketer to capitalize on a market opportunity and take the entire sector along with it.

The Northeastern US market is large and growing especially in the HRI markets. The market for goat milk is estimated to be around 3 million liters for fluid, but is not growing. The growth market for goat milk is for goat cheese. The volume consumed for artisanal cheeses is around 10 million liters, a slightly larger market than Ontario.

Atlantic Canada's goat milk production is in trouble. The current production of some 400,000 liters per year requires serious attention. The production and processing trends are negative for New Brunswick.

On the positive side, the current market for goats milk cheeses is very strong. To meet this artisanal cheese market and the local fluid milk market, a 300 milking doe herd is probably a minimum size. Conservative production assumptions show this herd size to be viable under

New Brunswick conditions. Smaller herds of 150 milking does are at best marginally viable.

B. CRITICAL SUCCESS FACTORS

1. Enter established markets. The local market for fluid goat milk is stable and growing slowly. The market, however, is neither growing fast enough, nor is it large enough to consume the production generated by 300 milking does. This means that the producer must get involved in both the fluid milk and cheese markets. Or, alternatively to direct the entire production and marketing effort towards one market or the other. The preferred option is to direct production and marketing attention towards the higher valued soft cheese market and to allow another producer to supply the fluid milk market. Goat cheese is a mainstream product while goats milk is a specialty product sold by few stores.

The other option would be to initially produce milk in sufficient volume to supply the local fluid market with the intention to contractuallysell the bulk of milk produced to Quebec and Ontario cheeses companies.

2. Establish a small artisanal processing facility. A small federally inspected milk processing facility could be built to handle some 500 – 1,000 liters of milk per day. The facility would have a small bulk tank, pasteurizer, curd tanks, cheese molds and refrigeration system. The system could be expanded at a later date to handle hard cheeses. Cost of a plant of this size varies depending on whether new or used equipment is purchased. The critical issue is not the equipment but the building, water supply and waste water handling. The building must be of a quality to be CFIA (Canadian food Inspection Agency) approvable. Almost all stainless steel equipment, whether new or used, is federally approvable. A cost of such a small facility is in the range of $40 – $150,000, depending on new or existing building, municipal water supply/sewage and quality of used equipment.

The choice of on-farm or off-farm processing depends on a number of factors such as water and sewage handling, financing, etc. Off-farm plants tend to be easier to finance.

3. Production must be in the range of 300 milking does. Costs show that under New Brunswick conditions, herds smaller than this are of marginal profitability. This is due to high feed grain costs. If existing dairy farmers already have their own feed production and an existing milking parlour which can be converted to dairy goat, the herd size can, however, be smaller. But, for a new start-up wishing to get into the business from scratch, a minimum of 300 milking does is required.

4. Marketing channels must be set-up to handle two-step marketing. Prices and costs must be such that a distributor can be placed into the marketing channel. Farm-gate marketing is an expensive way of selling marketing, it diverts management time away from production and processing issues. Costs must allow for at least a 25% marketing margin for the distributor.

Competition from large goat cheese producers will affect market entry in the grocery and HRI (Hotel, restaurant and institutional) markets, while competition from hobbyist goat cheese producers will affect local sales. A farmgate price of milk of around $0.70 per liter is required. For soft cheese, an on-farm processor price of around $8.00/kg is required. The ability to import cheese curd and finished cheeses from Europe effectively places a ceiling on the wholesale price of soft and hard cheeses.

5. Sales volumes of cheese must get to a point where it is economic to deliver to a grocery chain distribution center (i.e. private label for Sobey's /IGA) or to permit a distributor to handle the product on an HRI basis. A minimum of about 500 kgs per week are required to allow cheese to be promoted at retail (1-2 pallets), as well as to be transported economically.

6. Management is critical for production, processing, sales and marketing. In order not to spread management too thin, it is necessary to concentrate on cheese production. Vertically integrating production on a small scale requires extremely good management and is very expensive. Initially, it may be necessary to sell fluid milk, and as production volumes increase, to beyond 1,000 l. or so per week (the local market requirement), it will be necessary to begin exporting fluid milk to Ontario or Quebec before processing of cheese is started

The goat cheese market is growing. It is a mainstream product that can consume all of New Brunswick's goat milk production.

III

MARKETS FOR GOAT MILK

The Canadian market for goat milk is growing. The current market is in the range of 10 – 15 million liters. The bulk of production is in Ontario and Quebec. The growth, however, is for industrial milk as opposed to fluid. Market issues are outlined in this chapter.

A. CANADIAN GOAT INDUSTRY OVERVIEW

Canada's goat industry has shown 42% growth between 1991 and 1996. Exhibit 1 shows this. Growth has been greatest in Alberta, Ontario and Quebec. Alberta goat numbers have doubled. Goat numbers in Ontario and Quebec have shown growth in both meat and milk goat numbers.

Exhibit 1
GOAT PRODUCTION
SELECT CANADIAN PROVINCES
1991-1996 CENSUS

	1991 CENSUS		1996 CENSUS	
	FARMS	NO	FARMS	NO
CANADA	7,735	88,116	8,252	125,819
NEWFOUNDLAND	24	189	36	249
PRINCE EDWARD ISLAND	29	114	36	227
NOVA SCOTIA	176	2,313	194	2,572
NEW BRUNSWICK	90	547	78	806
ONTARIO	2,400	33,405	2,521	45,258
QUEBEC	889	12,317	931	15,445
ALBERTA	1,584	15,656	1,863	32,960

StatCan

The growth in Western goat numbers has been primarily in meat goat production. Western goat production is sold on the West Coast.

B. CANADIAN IMPORTS AND EXPORTS MINIMAL

Exhibit 2 shows Canadian imports and exports. Canada imported some 4,000 live animals and exported another 1,000 animals. The bulk of recent imports are in quality meat and milking goats. Canada imported some 672 tonnes of frozen and chilled goat meat.

Exhibit 2

CANADIAN IMPORTS AND EXPORTS
GOAT IMPORTS (1999)

ITEM	NUMBER
GOAT. LIVE PUREBRED (NO)	1.055
GOAT. LIVE NON PUREBRED (NO)	3.014
GOAT MEAT. FRESH. CHILLED FROZEN (KG)	672.810
GOAT OR KID HIDES. SKINS (NO)	857

StatCan

GOAT EXPORTS (1999)

ITEM	NUMBER
GOAT. LIVE PUREBRED /NON PUREBRED (NO)	1.283
GOAT MEAT. FRESH. CHILLED FROZEN (KG)	0
GOAT OR KID HIDES. SKINS (NO)	9.522

StatCan

C. ONTARIO LARGEST GOAT MILK MARKET

The largest Canadian market for milk is Ontario. Ontario produced some 3 million liters of milk in 1995. The production has now grown to over 7 million liters in 1999. Of this production two processors handle over 4 million liters. Hewitt is the largest fluid milk processor and Woolwich is the largest in cheese. The remaining 3 million liters, is handled by 7 small milk processors and artisanal cheese plants. Some 125 milk shippers ship to the 8-9 processors in Ontario.

1. Hewitt Major Fluid Producer

Hewitt is the largest goat fluid milk and yogurt producer in the country. Goat products are however a small part of Hewitt's overall dairy business – probably less than 10%.

Hewitt however plays a critical role in the Ontario industry because they are large buyers, but more so because they are the major milk transport company. Hewitt does some 70-80% of all on-farm goat milk pick-ups. The company then resells to other milk processors.

The company states that their fluid milk sales are flat. The fluid market in Ontario is estimated to be slightly less than 1 million liters.

The fluid market is suffering from a number of factors such as:

- Competing products such as soy milk, Lacteeze, etc. These competitive lactose free and lactose-reduced products are high quality products distributed by existing dairy companies.
- Lack of marketing. There is virtually little or no advertising and promotion for goat milk yogurt, milk, etc.
- No product development into flavoured drinks, better packaging, etc.
- Ethnic consumer products have limited potential for growth. A number of acidolphus products that are sold in the Eastern European and Southern European communities such as kefir, calpis, and yogurt drinks are not showing growth.
- Price is a problem. Goat milk sells for a 20-25% premium over competitive products.

2. Woolwich is Largest Goat Cheese Producer in Canada

Woolwich purchases some 3 million liters of milk to make soft cheese. (This converts into some 750,000 kgs. of cheese, depending on type, more kilos if it is Feta and less if is made into hard cheeses.) The company has shown dramatic growth over the last 5 years.

The company was started by the Harkin family in Ariss, Ontario and was sold to a family of Portuguese origin that had experience in goat cheese making. A new larger plant has been established in Orangeville.

The change in ownership added new product and marketing enthusiasm. The Woolwich product grew from a specialty health food line into a mainstream consumer product sold under the Presidents Choice label, as a co-pack item through the Loblaw chain of supermarkets.

Woolwich is currently the premier goat cheese processor in Canada. It has as much as a 60% market share in Canada. The remainder of the Canadian market appears to be divided evenly between Ontario artisanal processors, European import, and Quebec based artisanal processors. There are no US imports.

Woolwich has expanded marketing into the US. It has a major market share in the US. It competes with large specialty artisanal cheese producers such as Coach Farm in New York State. Their market growth in the US is due to a number of factors such as :

- Private label experience in Canada
- Low Canadian dollar
- Federally inspected plant
- Distribution network set-up to supply the regional US retail system
- Growth in HRI industry, and HRI adoption of goat cheese products for appetizer sales.

3. Other Small Ontario Processors

The other processors in Ontario are small plants. They are typically:

- Farm based dairies pasteurizing and selling to local health food markets and regional supermarkets.
- Small cheese plants that specialize in cows milk but on occasion process small batches of goat cheese on an opportunistic basis.
- Value-added product producers making yogurts, and specialty cheeses on an artisanal basis

- Ethnic product specialists making milk drinks, and specialty cheeses primarily for the local ethnic community.

4. Price of Milk Varies Between $0.68 - $1.00

The producer price of milk is around $0.68 - $1.00 a liter. There are quality and delivery bonuses to raise the price up to $1.00 to encourage winter production. The bonus addresses the need for stable year round production, and the fact that costs of producing milk during the winter months are higher than the summer. The price of milk is discounted by up to $0.04 a liter for transport charges.

D. CHEESE MARKET SHOWING GROWTH

All specialty cheese markets are showing growth. Major cheese importers and processors such as Saputo and McCains have stated the growth rates for cheeses vary from 30-40% for some specialty flavoured soft cheeses, to 12-15% for hard cheeses. Goat cheeses are showing growth in the 20-25% range.

Part of this growth is due to:

- Increased trend to dining out. HRI adoption of cheese for appetizers and toppings.
- Consumer trend away from red meats to other sources of protein, such as milk based (cheeses) and vegetable (pulses).
- Popularity of television cooking shows, and the interest in French country cooking, such as that of Provence where goat cheeses are used.
- Intelligent packaging. Smaller retail packages make specialty cheeses, more affordable at retail.
- Growth in flavoured cheeses, such as garlic, peppercorn etc.
- Advertising and promotion by chefs and boutique US goat cheese producer such as Coach Farms.

E. PREDICTED ONTARIO GROWTH TO 15-16 MILLION LITERS INDUSTRIAL MILK

The expected growth in goat cheese sales translates into large increases in industrial goat milk consumption by companies such as Woolwich. Exports of goat cheese to the US, plus increased domestic goat cheese sales are expected to require a doubling of milk production from around 8 million liters of milk up to at least 15-16 million liters over the next 5 years. Goat cheese sales are expected to grow from about 750,000 kgs. to 3,000,000 kgs.

F. CANADIAN MARKET GROWTH TO 20-25 MILLION LITERS

Based on the potential growth in goat cheese sales, it is expected that the potential Canadian goats milk market for fluid and industrial could reach 20-25 million liters of milk. This translates into an on-farm production requirement of 20,000 to 24,000 milking goats, or 150 farms, milking 150 goats each.

G. MARKETING CHANNELS FOR FLUID AND INDUSTRIAL MILK

Market infrastructure includes the marketing channel of intermediaries that comprise the distribution chain. The milk distribution system is comprised of two distinct marketing channels. One is the producer dairy type, and the other is the commercial dairy. New Brunswick and the Maritimes have the former, while Ontario has both.

The marketing channels used in the Maritimes (see numbers in italics) are outlined below:

- **Producers** – about 5% of Atlantic Canada's goat milk is sold farmgate. (Producer cost is around $0.50 - $0.75/l). Farmgate retailed milk sells for around $2.00/l.

- **Producer dairy** – about 95% of Atlantic Canada's goat milk is processed through producer dairies or farmer dairies such as Les Blanc d'Arcadie and Fox Hollow. (producer price is about $0.75/l.)

  About 3%, of this processed milk is sold to small specialty cheese and value added processors who market to local farmers markets, health food stores, etc.

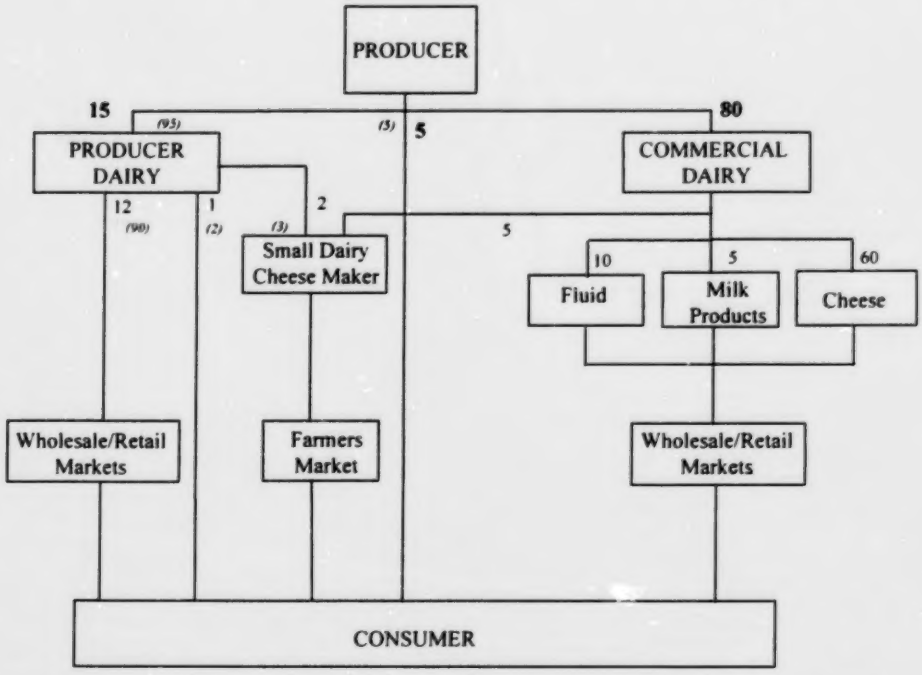
A further 2% of milk is sold directly through the producer owned dairy outlet store.

The remaining 90% of milk processed by the farmer dairy is sold through the wholesale and retail system. Northumberland Dairies undertakes this wholesale distribution for Les Blancs d'Arcadie. (The milk retails at around $2.25/l, and wholesales for around $1.70/l.)

In Ontario, the marketing channel uses both commercial and producer dairies. This is discussed in more detail below:

Exhibit 3

MARKET CHANNELS GOAT MILK



NUMBERS IN ITALICS SHOW THE MARITIME AND NORTH EAST DISTRIBUTION OF GOAT MILK, IN PERCENT, BY CHANNEL i.e. (5)

NUMBERS IN TIMES ROMAN SHOW THE APPARENT DISTRIBUTION OF GOAT MILK, IN PERCENT, IN ONTARIO i.e 5

PPD

- **Producers** - about 5% (bold numbers) of milk is sold directly at farmgate. Farmgate prices for milk sold to commercial dairies is approximately $0.70/l. Farm gate retailed product is sold for around $2.25/l. (Producer cost of milk is around $0.50-0.65/l)

- **Commercial dairies** – about 80% of goat milk produced is processed through large commercial dairies, and marketed on a two step basis.

  In the Ontario case, some 60% of volume is processed into cheese. (Cheese is wholesaled at prices between $10 - $14/kg).

  A further 10% of milk is processed for fluid sales (milk is wholesaled at around $1.70/l.), and 5% is processed into other dairy products such as yogurt. (Yogurt wholesales at approximately $2.50/l.)

  About 5% of processed milk is resold to small specialty cheese makers.

- **Producer dairies** – the remaining 15% is processed through producer dairies.

H. TECHNICAL STANDARDS AND SPECIFICATIONS

Dairy facilities can be both Federally and Provincially approved. But for milk and cheese to be distributed through national supermarkets, it needs to be processed in a federally approved facility. Smaller local grocery stores and health food retailers do sell product, which is only Provincially inspected. Export or out-of-province domestic sales require Federal inspection.

It should be noted that goat milk is often sold in an unpasteurized state. Unpasteurized goat milk is used to make soft cheeses. Many cheese specialists feel that the heating process kills many of the natural milk bacteria and affects flavour. Most European goat cheeses tend to be unpasteurized.

I. TARIFFS AND NON-TARIFF BARRIERS

There are no known tariffs and non-tariff barriers that restrict imports, exports and domestic sale of the various milk and cheese prod-

ucts. The only potential non-tariff is the need for pasteurizing and Federal inspection if the milk or goat cheeses are to be exported.

The standard tariffs and custom duties are outlined in Exhibit 4 below.

Exhibit 4

CANADIAN IMPORT DUTIES
TARIFF SCHEDULE 1999

TARIFF ITEM	DESCRIPTION	UNITS	MFN TARIFF	APPLICABLE PREFERENTIAL TARIFF
0104.20.90	GOATS		FREE	CCCT, LDCT, GPT, UST, MT, CT:FREE
0104.20.00.10	Pure bred breeding animals	NMB	FREE	
0104.20.00.90	Other	NMB	FREE	
1502.00.00	FATS OF BOVINE ANIMALS SHEEP OR GOATS		2.5%	CCCT, LDCT, GPT, UST, MT, CT:FREE
4103.10.00	RAW HIDES AND SKINS, FRESH, PICKLED BUT NOT TANNED OF GOATS OR KIDS	NMB	FREE	CCCT, LDCT, GPT, UST, MT, CIAT
4106.19.91	GOAT OR KID SKIN LEATHER, WITHOUT HAIR ON FOR USE AS PROCESSING MATERIALS FOR MANUFACTURE OF FOOTWEAR AND HANDBAGS	MTK	FREE	CCCT, LDCT, GPT, UST, MT, MUST, CIAT, CT:FREE
0406.90.98	CHEESE AND CURD	KG	$0.0406	MZT, CCCT, UST, CT:FREE
0406.90.98.30	Other, of partly skimmed milk	KG	$0.0406	
0406.90.98.40	Other, of skimmed milk	KG	$0.0406	

Canada Customs and Revenue Agency, Tariff Handbook

The low tariff on cheese and curd of 4 cents a kilo tends to allow processors to import cheeses in an unaged, curd form should there be problems in getting adequate supplies of industrial milk.

For Canadian goat milk producers, this means that there is an effective ceiling on the producer price of goat milk. The effective ceiling price is slightly more than a dollar per liter of fluid milk.

J. MILK PRODUCT FORMS

The product form for milk (by weight) varies depending on customer preference. The main dairy products and approximate industry distribution are:

- Fluid milk – 20 - 25%
- Soft cheeses – fresh (feta) and aged, 60 – 65%
- Hard cheeses – aged, 5 – 10%
- Yogurt – 5 – 10%

The product form tends to vary by geographic location. In the Maritimes fluid milk is the biggest seller. However, in urban centers such as Toronto and New York, soft cheeses such as Feta, and the aged (skinned and vacuum-packed) cheeses make up the bulk of retail sales.

K. INVENTORIES HAVE SHORT LIFE

Goat milk products, for the most part, do not have great shelf life. Products such as goats' milk, feta, and flavoured soft cheeses, etc. have a two to three week shelf life. (Vacuum packed soft cheeses do have a longer life but most small farm dairies, etc. do not vacuum pack.)

Many soft cheese dairies try not to have more than a 3 or 4 day supply on the supermarket shelves. Moreover, this high turnover due to perishability means that numerous small orders are taken and small deliveries are required. This small volume nature benefits the producer but tends to unduly increase consumer product cost.

L. WHOLESALE-RETAIL PRICE RELATIONSHIP

The price relationship is outlined in the section on Marketing Channels. The price build-up appears to be as follows:

- Producer price from around $0.65-0.75/l. (In some parts of Canada goats milk is priced as low as $0.55/l)
- Wholesale/Processor prices vary depending on the product the milk is made into:
    - Cheeses $10 – 14/kg (depends on whether the cheeses are hard or soft cheeses.) Hard cheeses are more expensive because more milk is required, up to 10 liters to make one kg of cheese. Soft cheeses often take only two to three liters to make one kg of cheese. Hard cheeses also re-

quire aging, and have a considerable storage cost.

- Fluid milk $1.70/l
- Yogurt $2.50/l (depends on the type of flavour and bacteria used (Balkan etc.)

- Retail prices are in the range of :
  - Cheeses $10 – $20.00/kg
  - Fluid milk $180-$2.50/l
  - Yogurt $3.00-3.75/l

M. PROMOTION AND TRADE SHOWS

US experience is showing that the method of promoting food is changing.

The traditional method to promote goat milk, cheese and yogurt was to attend Food shows and HRI (Hotel, Restaurant and Institutional) industry shows. By attending shows, the company could find distributors and brokers who would sell product into the various geographic markets.

A newer method of promotion appears to be to utilize television cooking shows. The television food shows have a tremendous audience. But more importantly, the use of celebrity chefs', etc. has further raised product profiles. Retailers and distributors are also watching these shows to gain product leads.

The Internet has changed the profile of goat milk. Many restaurants have begun to place their menus on their Websites and are describing their entrees, as well as placing "food pictures" on their sites. This sites often include detailed menu descriptions which include branded products such as melted "Coach Farm goats milk brie, Smithfield Virginia Spring lamb," etc. This has lead to other restaurants, as well as home cooks and distributors to seek out Coach Farms and Smithfield to buy their products.

The method of promotion is clearly moving away from the traditional trade show. This means that promotional efforts might be directed to:

- Getting product onto the 40 or so national television food shows. This means dealing with food editors and television producers to bring on chefs who understand goat meat and milk products.

- Developing quality Websites for producers and processors.

- Trade marking and branding product to make it identifiable.

- Develop niche products and product forms.

CONCLUSION

The Ontario market for goat milk gives an indication of the potential for increased sales. The growth in soft and hard goat cheeses is driving the milk market from around 7 - 8 million liters in Ontario to 15-16 million liters, and for Canada to over 20 million liters.

Just as importantly, the Ontario market shows the ability of one good processor and marketer to capitalize on a market opportunity and take the entire sector along with them.

It may be that New Brunswick could become an industrial milk supplier to feed the Ontario requirements to make goats cheese. Or, possibly it could develop its own artisanal cheese industry.

The following chapter outlines the production and market situation in Atlantic Canada.

IV

ATLANTIC CANADA GOAT MILK PRODUCTION AND MARKETS

In this chapter we outline the milk production and marketing situation in Atlantic Canada.

A. ALL ATLANTIC PROVINCES HAVE GOAT MILK PRODUCTION

Each of the provinces has goat milk production. This is shown in Exhibit 5.

Exhibit 5

CURRENT ATLANTIC CANADA GOAT MILK MARKET

(1999, NO, l/WK)

PROVINCE	NO. OF MILKING GOATS	FLUID MILK PRODUCTION l/WK	UTILIZATION OF MILK
NOVA SCOTIA	250	2,200 – 2,500	1,000 l/WK TO CHEESE
NEW BRUNSWICK	100	1,000 – 1,200	ALL FLUID
PRINCE EDWARD ISLAND	20	-	ALL FLUID
NEWFOUNDLAND	150	1,200 – 1,500	ALL TO CHEESE

PPD

Milk production ranges from 1,000 to 2,500 l/wk or 50,000 l/yr in New Brunswick, to 250,000 l/yr in Nova Scotia. Farmer dairies process the bulk of this goat's milk into fluid milk and some cheeses. The bulk of production is sold as fluid milk. The fluid milk market appears to be reaching a saturation level.

1. Newfoundland Co-op Produces Soft Cheeses

One of the newest groups is Cabot Caprine Co-op in Bonavista. Newfoundland. Cabot Caprine is a small cooperative that processes only cheese. The company is making soft cheeses. The company is expecting to increase production up to 250 milking animals up from 150. Goat cheese cannot be sold locally. The entire production is for export. The product is sufficiently high value and easy to ship that it makes export to New England and Central Canada possible. The company has distributors in Boston and Toronto.

2. New Brunswick Situation Changing

The New Brunswick situation is presently unstable. The current processor, Les Blancs d'Arcadie (Les Blancs) is planning to phase out production. The company has given up its marketing contract with Northumberland Dairy Co-op and they have sold their milking herd of 50 animals.

An Ontario producer is proposing to set-up a farming and processing operation and take-over Les Blancs current marketing relationship with Northumberland. Northumberland is selling about 1,000 liters of goat milk per week. (Production can vary seasonally up to around 1,300 l/wk.)

One of the many problems Les Blancs has had was the inability to sell more fluid milk. As a result, the company has attempted to make yogurt and cheeses, with its weekly surpluses, for sale through their own outlet. Another issue facing the company was the sheer amount of work required to run a farm and processing operation.

3. Nova Scotia Situation Unstable

Nova Scotia has two processors and some 7 – 9 producers. The situation has been in a state of flux for some time. Elm Valley Dairy Co-op has shut down, and Fox Hollow Dairies has opened in its place. Fox Hollow is a farmer owned dairy, set-up by the largest goat milk producer in the province. The Fox family were members of the defunct co-op. Exhibit 6 shows this.

Another dairy called Le Ferme d'Acadie in Yarmouth is currently in a fragile state. Rumor had it that they were closed. Farmers from southern Nova Scotia are shipping to Fox Hollow Dairies in Middle Musquodobit.

This decline in processing has meant that many of the producers are planning to quit the business. Several herds have already been dispersed. Some have been sold to Quebec buyers and another was reportedly sold to a new goat farming company that was to be establishing in New Brunswick.

The bulk of provincial production is fluid milk and artisanal cheeses.

Exhibit 6

CURRENT ATLANTIC CANADA GOATS MILK AND MEAT PROCESSORS

COMPANY	LOCATION
FOX HOLLOW DAIRIES	Middle Musquodobit. Nova Scotia
LE FERME D'ACADIE	Yarmouth. Nova Scotia
LES BLANCS D'ARCADIE	Caraquet. New Brunswick
CAPRINE CO-OP	Bonavista . Newfoundland

PPD

4. Prince Edward Island has Farmgate Industry

The goat industry in Prince Edward Island is purely a farmgate one. Most of the milk and meat is sold to locals. Most goats are owned by hobbyists, and by tourism operators.

5. Quebec Produces some 100,000 l/wk

Quebec production amounts to around 100,000 l/wk., or 5 million liters per year. Production is sold as fluid and soft cheese in the Montreal market. Most milk is sold farmgate, or made into artisanal cheese. Large cows milk cheese companies also buy goat milk on an opportunistic basis to make goat cheeses.

Quebec made cheeses are becoming a major export item. Quebec has a 10-15% market share of the Ontario goat cheese business.

CONCLUSION

Atlantic Canada's goat milk production is in trouble. The current production of some 400,000 liters per year requires serious attention. The industry must stabilize itself by selling milk to Quebec or Ontario; or develop a large-scale artisanal cheese processing industry.

The caution is that not everyone should enter into artisanal cheese production. Since the local Atlantic market is small, cheese and milk will require interprovincial or international sale. This means a federally inspected processing plant is required at the outset.

V

NORTH EASTERN US GOAT MILK MARKET

The Northeastern US market is large and growing especially in the HRI markets.

A. FLUID GOAT MILK SALES NOT GROWING

The markets for fluid milk are not growing. Substitute milk products have adversely affected the sales of fluid milk. This loss of fluid sales has, however, been more than compensated by the large growth in goat cheese. Most fluid milk is produced on cheaper land in the upstate New York area or in the warmer Pennsylvania area.

Saputo Cheese reported that all of the national chains contacted had goat milk cheese on their shelves but no goat milk in their coolers. Large and small artisanal cheese companies are selling to the chains. The market for goat milk is estimated to be around 3 million liters for fluid. The market for goat cheeses is thought to be around 10 million liters of fluid. Although the market is large, the industry is not as well structured as Ontario.

2. HRI MARKET FOR GOAT CHEESES IS LARGE

Large HRI supply companies such as SERCA are reporting sales of over 100,000 kgs of soft cheeses in the restaurant system. The exact amount of cheese being sold into the HRI system is unknown because of the artisanal nature of the goat cheese industry. They estimate the market will grow to be as large as one million kgs. The HRI market is especially large in the New York City, Washington DC, Philadelphia and Boston areas.

The largest US artisanal goat cheese company, Coach Farms, milks some 400 goats just for cheese production. The company sells a soft unpasteurized, non vacuum packed cheese into the New York City HRI market. The company direct sells a full line of flavoured soft cheeses. Coach is the best known goat cheese in the HRI market. The product is both high quality and expensive. It is clearly the highest priced cheese in the market. Their cheese sells in the range of $34.00 Can/kg at the wholesale level. (This is almost double Woolwich's wholesale price.)

Coach estimates the soft cheese market in New York City alone to be around 200,000 kgs. This translates into some 1 - 2,000,000 liters of milk, depending on the types of cheeses produced.

CONCLUSION

Although New Brunswick cannot sell fluid milk due to freight cost reasons, it might consider marketing artisanal cheeses, made in a Federally inspected plant, into the Northeastern US market.

Of course, not every producer should attempt artisanal cheese production targeting the New England market.

VI

GOAT MILK INDUSTRY TRENDS

The goat milk industry is showing a number of new trends. Among the more significant are:

- The interest of dairy cow producers to get into the dairy goat business. Ontario is showing a major influx of former dairy cow farmers into the industry. It is a lower cost, higher potential business. The high cost of cow milk quota is so high, that it makes better economic sense to try the goat milk business. For as little as $30,000 an economic start-up of up to 50 goats is possible. This amount hardly buys any milk marketing board quota.

  For dairy farms that have milking parlours, the conversion from dairy cattle to goats is at a rate of almost 1:5, i.e. one dairy cow converts to 5 goats. This means that small old dairy parlours are easily convertible to handle 100-150 milking goats.

- New entrants are starting with economic herd sizes. Purchases of 100 to 150 animals are being made. The probable minimum herd size is around 150 milking goats. This is the minimum number necessary to justify investment in milking machines, bulk storage and farm capital improvements. This will give a minimum of 1,500 l. of milk per week.

- Health food/hobbyists/part-timers are being sidelined. The old guard of veteran goat milk producers who operated on a marginal 5-20 animal basis is being ignored.

- The industry has been much too easy to enter. For under $1,000 people were entering the business. For $30,000 an individual could be a "large" commercial producer.

- Indications of vertical integration and contracting are beginning. Companies in the cheese business are beginning to offer better producers a form of contracting - installing storage tanks - to encourage better milk storage quality and a stable year round milk supply.

- Governments are getting involved. In Canada and the United States, the provincial and state governments are

actively encouraging goat production. Virtually every province, other than New Brunswick has a goat specialist. Some US states such as New York have a goat production and marketing person as part of their economic development departments.

- Industry is getting too trendy. In many ways the goat industry is taking on the breeding stock frenzy which overtook the ratite business. Stock prices are now rising. Quality milking stock is selling from $350 - $700 each. Order buyers have standing orders for up to 1,000 milking animals.

- Goat milk sales growth is not in fluid sales. The growth is all in industrial milk for cheese production. Goat cheese has become a mainstream food item available in grocery stores across the country, while goat milk has remained a specialty item in health food stores. It has made little inroad in the national supermarket chains.

More specific producers and processor trends are outlined in the next section.

A. FLUID AND VALUE ADDED PROCESSOR ISSUES

Primary processor issues include the following:

- Inconsistent supply – the weekly supply of milk is too variable, because the overall number of shippers is too small. When there are only 5 or 6 shippers, a failure of one farmer to deliver because of snow, power failure, disease, etc. is catastrophic. It is not economic to operate a pasteurizer or packaging/bottling machine if volumes are not adequate.

  A minimum sized pasteurizer is around 500 l capacity. The problem is to be able to switch a small processing plant from a hot water system (for process heat and clean-up) to a package steam boiler system. Steam is more efficient for pasteurizing, equipment cleaning and for sterilizing bottles and packaging materials. At a 1000 l per week, it is not possible to operate a small processing plant with steam or any type of automated mechanical filling and weighing systems.

- Difficult to do pick-up – the inability to do daily or every second day pick-up of goat milk is extremely dif-

ficult. The small daily milk production makes it difficult to operate a tanker truck to undertake rural milk pick-up. This inability to adequately schedule pick-up means that milk can be 3 – 5 days old. This means that goat milk is hardly at its prime for fluid, and may have no other possible market than cheese manufacture.

The cost of small volume rural pick-up has lead to the development of on-farm processing.

- Variability of milk quality – this is due to two factors. One is related to milking conditions, i.e. whether the milk is pipelined or hand-milked since goat milk absorbs odor readily. This combined with poor storage and slow pick-up means that milk is often not in top condition when it reaches the processor. Another factor is the feeding regime used. Feed has an effect on milk taste and odor.

- Need new products to balance fluid sales – there is a need to find other market outlets to consume surplus fluid milk. For example, if fluid sales are 1,000 liters per week and production increases to 1,200 liters per week because the weather improves and grass is better, there is a need to get rid of the surplus liters. The only way to do this is to have a buffer product such as cheese, yogurt, etc., to keep the product from being dumped. What has typically happened in the goat milk business is that the dairy refuses to buy milk until the surplus 200 l. has been sold, thereby turning off producers who must milk daily whether there is a market or not, just to keep the herd in condition.

  This need for surplus removal means that money must be spent on ancillary production equipment and facilities. There is a need for processors to expand beyond fluid sales into the production and marketing of other products such as cheese, yogurt, etc. If cheese production is attempted, temperature and humidity controlled aging rooms, moulds, etc. are required. (The problem is that both the primary - fluid milk, and secondary products - cheeses are often produced and marketed at a sub optimal volume.) The other option is to decide what other local products can utilize the sterilizing and bottling equipment i.e. local cranberry or blueberry juices, soups, chowders, maple syrup, etc. This is necessary to increase plant utilization and to minimize distribution costs.

- No attempt to market – there is no apparent interest in marketing milk, milk products and other non-milk items. Flavoured products, discount coupons, etc. are possible. But more importantly, there is no attempt to broaden distribution because there is little interest in hiring a broker or agent to handle product sales. Most companies try to undertake their own distribution rather than hire a company with a wider geographic distribution, because they cannot afford the market discounts that apply to two step marketing. The reality is that a distributor is required if 500 – 1,000 kgs. of cheese per week is to be marketed in the Ontario or New England markets.

- Difficult to gain distribution through the retail network. It is difficult to enter the grocery distribution system because of the small marketable volumes. Maritime fluid milk sales are less than 3,000 l. per week. Moreover, since refrigerated shelf space is extremely expensive and difficult to service, only high turn-over items such as milk or high profit margin items such as orange juice normally get access. To get goats milk on the high volume retail shelf it is necessary to utilize a two step distribution system in order to gain retail market access.

  The two step system allows a wholesaler/distributor (i.e. Northumberland) to sell or consign product to the retail chains (i.e. Sobeys). Northumberland is a good distribution choice for Les Blancs d'Arcadie since they service the refrigerated cases with both cow and goat milk. They may not, however, be as good a choice for the distribution of goat cheese. The refrigerated cheese case is typically serviced by the store itself. (In the Maritimes, the producer might deliver the cheese directly to Sobeys warehouse in Debert, N.S., and Sobeys undertake the store-to-store distribution.)

- Variable product quality – processed product varies from week to week and seasonally. This is due to a variety of issues related to milk quality, pick-up, storage, and processing issues. There are no sensory or quality standards other than pasteurization.

- Most producers and processors in goat milk are working on verbal arrangements; there are few contracts. This is because most processors are on-farm or producer owned. In fact, there are probably less than 250 goat milk producers shipping milk in Canada. More importantly, there are no real milk quality standards, or rigidly

maintained pick-up schedules upon which agreements can be struck.

Processors must set-up contract arrangements with producers, if volumes are to increase. Contracts should provide for quality, transport and seasonal pricing fluctuations. Typically, contracted volumes with bacteria count criteria must be mutually agreed on, along with storage standards and pick-up schedules. Prices for milk might be fixed for the year, or varied to encourage production during the colder winter months. The problems with goat milk contracting are its sensory values, of taste and odor that are hard to measure, and vary from farm to farm.

Many of these processor problems can be resolved by increased scale of operations. However, many processors do not wish to grow beyond their current on-farm plant.

While on-farm processing of goats milk is common in Canada, for the industry to expand, large commercial dairies are required. These larger facilities have both economies of scale as well as the ability to market cheeses and other value-added products. On-farm processing is clearly not preferred, but in a low volume start-up situation, such as in New Brunswick, there may be no other option but to build a small federally inspected processing plant.

B. PRODUCER ISSUES

Producer issues are as difficult as processor ones. The major producer issues include:

- Producers do not trust the processor – this lack of trust is due to a number of factors such as prior histories of being cut-off by a processor because there was a surplus of milk.

- Quirkiness of goats – the nature of the animal has to be understood and dealt with. There are problems in terms of herd hierarchy. It is difficult to introduce a new adult animal into the herd. Issues such as this make them difficult to feedlot older animals.

- Need larger production units – the cost and management requirements are too much for many producers. Many producers do not wish to grow beyond part time producer status. They wish to remain small, thereby perpetuating problem issues such as milk pick-up.

- Very labour intensive – production is up to one third more labour intensive than dairy cattle. This seven day a week business becomes a drudge for many.

- Need quality barns and parlour – there is a need for a quality set-up if labour is to be minimized and equipment to be effectively utilized.

- Low productivity – average production is between 1.5 and 3 liters per animals per day. Herds have been known to produce up to 5 - 6 and occasionally up to 8 liters per day.

- Irregular nature of the cull markets – the seasonal nature of meat markets makes it difficult to get a good price for dairy culls and male dairy kids. The bulk of sales are on major ethnic holidays.

- Part-time nature of production – may mean the current scale and economics may be as good as it will ever get.

There is an apparent difficulty for producers and processors to understand that they are partners, that they are interdependent.

C. NEW BRUNSWICK GOAT MILK ISSUES

New Brunswick is not particularly conducive to the goat milk industry. Major issues include:

- Small local markets – the market for milk in the Province and in Atlantic Canada is small. Total milk markets amount to no more than around 2,500 liters per week. The market is currently supplied by at least two farmer dairies. The New Brunswick market is close to being met with 1,000 – 1,200 l. per week of production. Better marketing and availability might grow the fluid sales volume, but it is unlikely to grow by 30-40% or to double.

- Farmgate markets for culls are small. The distance from urban markets makes it difficult to find good prices for old heavy goats, spent dairy culls, and small kids. The logical value market would be Montreal or Boston. But there aren't enough animals to make-up a small load.

- Cold, long winters. Milk production declines substantially due to the cold and poorer feed quality. Most breeds suffer winter health problems. Winter makes milk production more expensive because they need shelter and supplemental feeding.

- Industry needs new entrants. There hasn't been a rush to enter the industry in New Brunswick as there has been in Ontario and the US.

- Environmental issues in New Brunswick are unique. Environmental regulations that require licensing tend to work against buying old farmsteads to convert old hog and chicken barns to goat production.

- Processing of milk is unstable. There is a need to develop outlets for surplus fluid milk. This product might be made into cheese for local sale or sold as fluid into Nova Scotia. (Fox Hollow has imported milk from Ontario to keep their new facility running.) Or, if there is a reasonably large volume of surplus, it might be sold as fluid for cheese making to Cabot Caprine in Newfoundland or to a Quebec artisanal cheese producer.

- Need to develop contracts in order to encourage other producers to enter fluid production.

CONCLUSION

The production and processing trends are negative for New Brunswick. On the other hand, the current market for goat milk cheeses is very strong. The market is sufficiently large to make it viable for a small number of artisanal cheese producers to thrive. Each artisanal cheese maker must, however be sufficiently large to have a Federally approved plant. The need for Federal inspection in order to export milk or cheese outside the Province adds both real costs and additional management requirement. Federal inspection adds to the cost of market entry. A small cheese plant with approvals will cost in the range of $150,000, utilizing a quality new building with quality used equipment. On the cheap, it may be possible to build a very small plant with a minimum of used equipment, and have it Federally approved for as little as $40,000.

VII

PRODUCTION FEASIBILITY - GOAT MILK

In this chapter we develop data related to the production feasibility of goat milk. The problem for New Brunswick producers is the inability to develop viable large-scale milk production units of at least 150 milking animals, but ideally 300 milking animals. This scale is required due to the need to:

- Have sufficient production to be self sustainable – there is not enough industry infrastructure to allow small producers to survive in milk and cheese production.
- Make downstream artisanal cheese production possible.
- Have sufficient volume to justify a federally inspected small producer dairy plant.
- Have sufficient profitability (14%) to be able to undertake quality packaging and promotion.

This 150 milking herd size has been shown by Cabot Caprine in Newfoundland, and Fox Hollow in Nova Scotia to be a minimum standalone size in Atlantic Canada. Both of these operations are slightly too small and require external purchases of milk for their processing facilities. These external purchases from small herds have for the most part been much too unstable. Cabot Caprine is increasing their milking herd up to 250. The ideal would be a critical mass of two or three 300 animal herds, or at minimum, 3 – 4 quality shippers with 150 milking goats each.

Although operations can be smaller, in unit size, and the economics may vary depending on whether the farm has debt or not, the physical production requirement is that at minimum, 1500 l. of milk per week must be produced and properly stored. This is probably the minimum requirement to make it economical to do processing of milk. To justify pick-up, 1,000 l., approximately one metric tonne, or one carboy is probably the minimum requirement. More volume is clearly better than less.

The ideal condition for a goat milk dairy for cheese making is the picking up of milk on a daily basis. The absolute ideal would be picking up morning milk to be made into morning cheese.

For cheese making to be practical, a minimum daily volume of cheese production is required. Again, much as in fluid milk processing, a

minimum of 500 liters of milk must be processed a day to justify the investment in equipment and effort necessary to be a "Federally inspected" artisanal cheese maker. Volume of production less than this not only becomes difficult in processing but also becomes extremely difficult in marketing. There is not enough volume to be able to offer an on-going retail or wholesale supply continuity. In the case of New Brunswick, since goat cheese sales will be primarily out-of-province, sufficient cheese must be produced to make cheese transport and handling economic.

A. COST OF PRODUCTION - 300 MILKING HERD

The cost of production for a three hundred milking doe herd is outlined in Exhibit 7. The assumptions are conservative based on New York, Pennsylvania and Ontario production conditions. We believe these costs may be achievable in New Brunswick. Profitability amounts to almost $0.054 per liter. The basic assumptions are:

- Price of milk - $0.70 per liter
- Kid sales - 420 hd
- Cull doe sales – 60 hd
- Feed grains are based on prices FOB Truro
- Interest rate – 7.75% to borrow operating capital
- Fixed assets – farm with old dairy barn and facilities, 100 acres, tractor, truck, baler, other forage handling and manure handling equipment - $159,000
- Long term debt – total long term loans of $176,000.
- Short term loans - $30,000
- Labour – family labour plus one hired

We have not included the cost of a small on-farm federally inspected dairy capable of handling up to 1000 l per day. A small plant of this size could cost as little as $40,000 (used equipment in a small new building) to as much as $150,000. The difference in costs is related to five factors: the purchase of used equipment, the size of the steam boiler, size of refrigeration system, availability of water/sewerage and the quality of the new or retrofit building.

B. COST OF PRODUCTION 150 MILKING GOAT HERD

While a 150 milking goat operation is profitable on a milk production basis, $0.0240 per liter, (this is less than 40% of the profitability of a 300 head operation) there is insufficient excess milk production to allow for fluid milk sales and artisanal cheese production. There is milk for the local market, but not enough surpluses for efficient cheese production and marketing.

The basic assumptions are shown in Exhibit 8:

- Price of milk - $0.70 per liter
- Kid sales - 210 hd
- Cull doe sales – 30 hd
- Feed grains are based on prices FOB Truro
- Interest rate – 7.75% to borrow operating capital
- Fixed assets – farm with old dairy barn and facilities, 60 acres, tractor, truck, baler, other forage handling and manure handling equipment - $100,000
- Long term debt – total long term loans of $106,000.
- Short term loans - $15,000
- Labour – family labour plus one part-time

On the assumption that the local market requires 1000 l. per week, there is about 1000 l per week of fluid available for cheese or other uses. But this is not enough milk to allow for captive cheese production. This surplus goat milk might be sold to Woolwich in Ontario for cheese making. From a freight point of view, it is more economic to ship to Nova Scotia, but Fox Hollow may have trouble marketing a further 1,000 l. per week of fluid.

CONCLUSIONS

The probable minimum economic size of milk production unit is 300 milking does. This might be comprised of two smaller 150 milking

doe units working together, but economies of scale virtually rule this out. The only possibility is if the producer is a former cow milk producer and can easily convert his existing facilities over to goats.

The only way for a 300 doe operation to truly make money is to undertake value-added operations such as processing milk, making cheese, etc. This allows the production revenue per liter to be increased. However, processing entails the need to market, and the need for capital investment of at least $40,000 plus additional operating costs for marketing and distribution. For most producers it will be is easier to concentrate on shipping milk, and leave processing to others.

This 300 milking doe size allows for sufficient milk to be produced to supply the local fluid market plus leave adequate surplus to be credible in the artisanal cheese business.

Exhibit 7

DAIRY GOAT HERD ANALYSIS – 300 HD

Number of milking does	hd	300
Percent does culled	%	20
Milking doe death losses	%	2
Weight of cull does	lbs	135
Price of cull does	c/lb	50
Replacement does raised	hd	66
Number of breeding bucks	hd	6
Weight of cull bucks	lbs	225
Price of cull bucks	c/lb	55
Number of bucks culled	hd	2
Percent kid crop	%	180
Percent kid mortality	%	10
Marketable kid crop	hd	486
Selling price of kids	$/hd	20
Milk yield per doe	l/hd	675
Price of milk	$/hd	70

Revenues:	**Unit**	**No.**	**$/Unit**	**$/Year**
Breeding doe kid sales	hd	0	$ 150.00	$ 0.00
Breeding buck kid sales	hd	0	$ 250.00	$ 0.00
Other breeding stock sales	hd	0	$ 0.00	$ 0.00
Cull doe sales	hd	60	$ 67.50	$ 4,050.00
Cull buck sales	hd	2	$ 123.75	$ 247.50
Market kid sales	hd	420	$ 20.00	$ 8,400.00
Milk sales	hl	2025	$ 70.00	$ 141,750.00
Total Revenues				$ 154,447.50

Expenses:		300	
Variable Costs:		**$/doe**	**300 does**
Purchased feed			
Hay		$ 7.50	$ 2,250.00
Grain		$ 9.20	$ 2,760.00
Protein supplements		$ 94.00	$ 28,200.00
Salt and minerals		$ 0.00	$ 0.00
Prepared feeds		$ 0.00	$ 0.00
Pasture		$ 0.00	$ 0.00
Total purchased feed costs		$110.70	$33,210.00
Home grown feed			
Pasture			$ 0.00
Hay		$ 14.00	$ 4,200.00
Grain		$ 52.05	$ 15,615.00
Total home grown feed		$ 66.05	$ 19,815.00
Total Feed Costs		$ 172.85	$ 53,025.00

	$/doe	300 does
Livestock Replacement		
Buck purchases	$ 2.00	$ 600.00
Milking doe purchase		
Replacement doe purchase		
Other		
Total Replacement Stock	$ 2.00	$ 600.00
Other		
Hired labour	$ 4.00	$ 1,200.00
Veterinary and medicine	$ 15.00	$ 4,500.00
Breeding costs	$ 0.00	$ 0.00
Bedding	$ 1.00	$ 300.00
Marketing	$ 17.00	$ 5,100.00
Transportation	$ 35.00	$ 10,500.00
Livestock supplies	$ 0.00	$ 0.00
Manure removal	$12.00	$3600.00
Equipment rentals	$ 0.00	$ 0.00
Miscellaneous (tags etc.)	$ 35.00	$ 10,500.00
Fuel	$ 2.50	$ 750.00
Machinery repair and maintenance	$ 4.25	$ 1,275.00
Building repair and maintenance	$ 40.00	$ 12,000.00
Rent and labour	$ 0.00	$ 0.00
General variable costs	$ 32.00	$ 9,600.00
Interest on operating capital	$9.41	$ 2,823.00
Total Variable Costs	$ 385.91	$ 115,773.00
Fixed Costs:		
Depreciation	$ 26.00	$ 7,800.00
Interest on term loans	$ 45.00	$ 13,500.00
Long-term leases	$ 0.00	$ 0.00
General fixed costs	$ 15.00	$ 4,500.00
Total Fixed Costs	$ 86.00	$ 25,800.00
Profitability:		
Total Revenues	$ 514.83	$ 154,447.50
less Variable Costs	$ 385.91	$ 115,773.00
Operating Margin	$ 128.92	$ 38,674.50
less Fixed Costs	$ 86.00	$ 25,800.00
Net Income	$ 42.92	$ 12,874.50

Breakeven:	Kid Sold	hl Milk
Variable Costs	$ 14.99	$ 52.47
Fixed Costs	$ 3.34	$ 11.69
Total Costs	$ 18.33	$ 64.16

Exhibit 8

DAIRY GOAT HERD ANALYSIS - 150 HD

Number of milking does	hd	150
Percent does culled	%	20
Milking doe death losses	%	2
Weight of cull does	lbs	135
Price of cull does	c/lb	50
Replacement does raised	hd	33
Number of breeding bucks	hd	3
Weight of cull bucks	lbs	225
Price of cull bucks	c/lb	55
Number of bucks culled	hd	1
Percent kid crop	%	180
Percent kid mortality	%	10
Marketable kid crop	hd	243
Selling price of kids	$/hd	20
Milk yield per doe	l/hd	675
Price of milk	$/hd	70

Revenues:	**Unit**	**No.**	**$/Unit**	**$/Year**
Breeding doe kid sales	hd	0	$ 150.00	$ 0.00
Breeding buck kid sales	hd	0	$ 250.00	$ 0.00
Other breeding stock sales	hd	0	$ 0.00	$ 0.00
Cull doe sales	hd	30	$ 67.50	$ 2,025.00
Cull buck sales	hd	1	$ 123.75	$ 123.75
Market kid sales	hd	210	$ 20.00	$ 4,200.00
Milk sales	hl	1013	$ 70.00	$ 70,910.00
Total Revenues				$ 77,258.75

Expenses:	150	
Variable Costs:	**$/doe**	**150 does**
Purchased feed		
Hay	$ 7.50	$ 1,125.00
Grain	$ 9.20	$1,380.00
Protein supplements	$ 94.00	$ 14,100.00
Salt and minerals	$ 0.00	$ 0.00
Prepared feeds	$ 0.00	$ 0.00
Pasture	$ 0.00	$ 0.00
Total purchased feed costs	$ 110.70	$ 16,605.00
Home grown feed		
Pasture		$ 0.00
Hay	$ 14.00	$ 2,100.00
Grain	$ 52.05	$ 7,807.50
Total home grown feed	$ 56.05	$ 9,907.50
Total Feed Costs	$ 166.75	$ 26,512.50

	$/doe	150 does
Livestock Replacement		
Buck purchases	$ 2.00	$ 300.00
Milking doe purchase		
Replacement doe purchase		
Other		
Total Replacement Stock	$ 2.00	$ 300.00
Other		
Hired labour	$ 4.00	$ 600.00
Veterinary and medicine	$ 15.00	$ 2,250.00
Breeding costs	$ 0.00	$ 0.00
Bedding	$ 1.00	$ 150.00
Marketing	$ 17.85	$ 2,677.50
Transportation	$ 36.75	$ 5,512.50
Livestock supplies	$ 0.00	$ 0.00
Manure removal	$ 13.00	$ 1,950.00
Equipment rentals	$ 0.00	$ 0.00
Miscellaneous (tags etc.)	$ 38.50	$ 5,775.00
Fuel	$ 2.50	$ 375.00
Machinery repair and maintenance	$ 4.68	$ 701.25
Building repair and maintenance	$ 44.00	$ 6,600.00
Rent and labour	$ 0.00	$ 0.00
General variable costs	$ 35.40	$ 5,310.00
Interest on operating capital	$ 9.54	$ 1,431.00
Total Variable Costs	$ 390.97	$ 58,645.50
Fixed Costs:		
Depreciation	$ 35.00	$ 5,250.00
Interest on term loans	$ 55.00	$ 8,250.00
Long-term leases	$ 0.00	$ 0.00
General fixed costs	$ 16.50	$ 2,475.00
Total Fixed Costs	$ 106.50	$ 15,975.00
Profitability:		
Total Revenues	$ 514.83	$ 77,224.50
less Variable Costs	$ 390.97	$ 58,645.50
Operating Margin	$ 123.86	$ 18,579.00
less Fixed Costs	$ 106.50	$ 15,975.00
Net Income	$ 17.36	$ 2,604.00

Breakeven:	**Kid Sold**	**hl Milk**
Variable Costs	$ 15.18	$ 53.13
Fixed Costs	$ 4.14	$ 14.47
Total Costs	$ 19.32	$ 67.60

APPENDIX

Interviews:

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